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APPLICATION NO.	FILED DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/756,438	01/08/2001	Mark Krichever	7157-351	5494

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[REDACTED] EXAMINER

HESS, DANIEL A

ART UNIT	PAPER NUMBER
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2876

DATE MAILED: 04/24/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/756 438

Applicant(s)

KRICHEVER ET AL

Examiner

Daniel A Hess

Art Unit

2876

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM
THE MAILING DATE OF THIS COMMUNICATION

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply, if timely filed, after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely;
- If NO period for reply is specified above, the maximum statutory period will apply, and will expire SIX (6) MONTHS from the mailing date of this communication;
- Failure to reply within the set or extended period for reply will by statute cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(c).

Status

- 1) Responsive to communication(s) filed on _____.
- 2a) This action is FINAL. 2b) This action is non-final
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) Claim(s) 1-14 is/are pending in the application.
 - 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
 - 5) Claim(s) _____ is/are allowed.
 - 6) Claim(s) 1-14 is/are rejected.
 - 7) Claim(s) _____ is/are objected to.
 - 8) Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on _____ is/are: a) accepted or b) objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) The proposed drawing correction filed on _____ is: a) approved b) disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) All
 - b) Some *
 - c) None of:
 1. Certified copies of the priority documents have been received.
 2. Certified copies of the priority documents have been received in Application No. _____.
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17 2(a))
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application)
 - a) The translation of the foreign language provisional application has been received
- 15) Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) Notice of References Cited (PTO-892)
- 2) Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) Information Disclosure Statement(s) (PTO-1449) Paper No(s) 2

- 4) Interview Summary (PTO-413) Paper No(s) _____
- 5) Notice of Informal Patent Application (PTO-152)
- 6) Other

DETAILED ACTION

Priority

1. Receipt is acknowledged of papers submitted for priority under 35 U.S.C. 120, which papers have been placed of record in the file (US App. 60 204,689 dates 05 17 2000).
2. An application in which the benefits of an earlier application are desired must contain a specific reference to the prior application(s) in the first sentence of the specification or in an application data sheet (37 CFR 1.78(a)(2) and (a)(5)).

Information Disclosure Statement

3. The information disclosure statement filed 01 18 2001 fails to comply with 37 CFR 1.98(a)(2), which requires a legible copy of each U.S. and foreign patent; each publication or that portion which caused it to be listed; and all other information or that portion which caused it to be listed. Nevertheless, those patents listed therein have been considered.

Claim Objections

4. Claim 1 is objected to because of the following informality: The term 'first and second imagers' (line 6) should read 'first and second imagers respectively.' Appropriate correction is required.

5. Claims 2 and 3 are objected to because of the following informalities: The term 'first and second windows' (claim 2, line 2 and claim 3, line 2) should be replaced with the term 'first and second windows respectively.'

Appropriate correction is required.

Claim Rejections - 35 USC § 112

6. Claim 3 recites the limitations "the first light source" in line 3 of the claim and "the second light source" in line 6 of the claim. There is insufficient antecedent basis for this limitation in the claim. In claim 1, no light sources are referred to.

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

9. Claims 1, 3 and 6-9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ohkawa et al. (US 5,936,218) as modified by Bunte et al. (US 6,330,975).

Re claims 1 and 6: Ohkawa shows (column 3, lines 38-39; column 8, lines 64-65) a bar code scanner having a bottom window 5 and a side window 4 (see figure 2A). There is also (see figure 6) a first detector 28 and a mirror directing light to the detector (30). Similarly, there is a bottom mirror 33 directing light to a second detector 29. Viewing figure 20 (sheet 30) one notes that detectors 28 and 29 each capture a separate image coming from a different direction as can be seen by the arrows indicating the different light paths. There are two separate views of the scanned object 25.

Ohkawa fails to show that a full image is captured by each detector.

Bunte has (column 1, lines 30-45) a detector which captures and processes coded images. There is further a display means which displays captured images immediately after capture (column 5, lines 30-44). As Bunte notes, this allows the user to determine that scanner has the scanned item within its field of view.

In view of Bunte's teaching, it would have been obvious to one of ordinary skill in the art at the time the invention was made to include the old and well-known detector which captures coded images and then displays them as taught by Bunte into the teachings of Ohkawa because this allows the user to determine that scanner has the scanned item within its field of view.

Re claims 3 and 7: Ohkawa (column 9, lines 45-55) shows a half mirror (figure 3, 26) such that laser 21 light hits the mirror 26 and goes through the bottom window 5. The return light goes through a second mirror 30 with a through-hole (column 9, lines 55-65)

Ohkawa fails to show a half-mirror performing both the forward and return rays of claim

3. Ohkawa further fails to show half silvered mirrors for both of the first and second windows.

However, the embodiment of Ohkawa could be simplified if the light dividing mirror handles the return light as well.

In view of Ohkawa's teaching, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have the old and well-known half mirror 26 as taught by Ohkawa additionally perform the same function as the second mirror 30 in order to simplify the apparatus by reducing the number of mirrors. It further would have been obvious to extend this half-mirror action to the second window in order that the second window has its own set of optics, particularly in cases such as where the optical and beam characteristics are different for each window. Regarding specifically claim 7, the half-mirror 26 of Ohkawa is stationary.

Re claim 8: Ohkawa has a decoder circuit (column 12, lines 1-10) which decodes sensed optical signals. Ohkawa doesn't specifically discuss decoding of sensed *images* as per Ohkawa modified by Bunte in claim 1. However, in order to retrieve barcode data as a barcode reader does, it must inherently have some kind of decoding means.

Re claim 9: As seen in Ohkawa (column 12, lines 1-10) there is just one decoder circuit. Therefore decode operations must occur in sequence. To perform decoding in parallel, by definition more than one decoding means must be present.

10. Claim 2 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ohkawa as modified by Bunte as applied to claim 1 above in further view of Rando et al. (US 5,723,852).

The teachings of Ohkawa as modified by Bunte fail to show two separate light sources.

Rando has a device for scanning from two sides (column 7, lines 28-36). He has (figure 6A) multiple laser light sources 65a-65d.

In view of Rando's teaching, it would have been obvious to one of ordinary skill in the art at the time the invention was made to include the old and well-known multiple laser light sources in a scanner with multiple scanning surfaces and directions as taught by Rando into the teachings of Ohkawa as modified by Bunte because as Rando notes (column 9, lines 30-40) one laser source is used for scanning features greater than a certain size, another different laser source is used for scanning features less than a given size.

11. Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ohkawa as modified by Bunte as applied to claim 3 above, in further view of Marrom et al. (US 5,331,143).

Ohkawa as modified by Bunte fails to show the use of a light condenser between the first light source and the first mirror or between the second light source and the second mirror.

Marrom shows (figure 5, 22; column 11, lines 25-30) an axicon which condenses a light source before it reaches the object.

In view of Ohkawa's teaching, it would have been obvious to one of ordinary skill in the art at the time the invention was made to include the old and well-known condensing element to focus a beam before it reaches a bar code as taught by Marrom into the teachings of Ohkawa as modified by Bunte because such condensing gives a beam desired properties such as spot size and focal distance. Although Marrom does not show that the condensing element is between a light source and a mirror, it would have been obvious to use a mirror to perform redirection as necessary to point the beam in the desired way because a mirror is the optical element normally used for redirection.

12. Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ohkawa as modified by Bunte as applied to claim 1 above, in further view of Li (US 5,744,790).

Ohkawa as modified by Bunte fails to show a detector which is a CCD array.

Li shows multiple direction scanning (abstract, line 6) in which a CCD array is employed. A CCD array (column 5, lines 40-50) can be used in the detector 14.

In view of Li's teachings, it would have been obvious to one of ordinary skill in the art at the time the invention was made to include the old and well-known CCD array for bar code scanning as taught by Li into the teachings of Ohkawa as modified by Bunte because a CCD array can pick up more data at once than a single photosensor and therefore would pick up data faster.

13. Claim 10 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ohkawa as modified by Bunte as applied to claim 8 above, in further view of Wang (US 5,914,477).

Ohkawa as modified by Bunte fails to show parallel decoding.

Wang (column 6, lines 20-22) refers to 'high speed parallel decoding.'

In view of Wang's teachings, it would have been obvious to one of ordinary skill in the art at the time the invention was made to include the old and well-known parallel decoding of barcode reads into the teachings of Ohkawa as modified by Bunte because as Wang notes, is 'high speed.'

14. Claims 11, 13 and 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Katoh et al. (US 5,801,370) as modified by Tang et al. (US 5,886,336).

Katoh has a multidirectional barcode scanning device (title) in which there are (see figures 3a and 3b) windows 13a and 13b angled with respect to one another. Folding mirrors 21a

and 21b fold the beam for windows 13a and 13b respectively (figure 3b). There are (column 4, line 55) light receiving elements associated with each window. There is (column 4, lines 10-15) a rotatable mirror. This mirror 12 (column 5, lines 30-35) can also be seen to rotate through a curved arrow in figure 3b. Webster's defines 'to image' as 'to represent symbolically;' therefore any barcode scanner which represents the barcode as some kind of data, including Katoh's, is an imager.

Katoh fails to show interlacing of data being sent to a single detector from two different sources.

Tang shows (column 4, lines 8-16 and 25-43) a spinning mirror for receiving data from different beams and directions to a single detector 42 (see figure 2). This data must be interlaced (i.e. must have 2 different types of data alternating) because data comes from two sources into one location.

In view of Tang's teaching, it would have been obvious to one of ordinary skill in the art at the time the invention was made to include the old and well-known moving mirror for producing interlaced data as taught by Tang into the teachings of Katoh this configuration permits multi-direction scanning with just one detecting and decoding means rather than two, thereby reducing the cost of the device.

Re claim 13: Katoh has (column 9, lines 22-28) a decoding means. This decoding means is discussed in reference to a different embodiment from claim 11, which is the embodiment of Katoh in figures 1-5. However, even though there is no discussion of the particular decoding of figures 1-5, there would have to be a decoding means for this embodiment as well, in order to convert raw data into a barcode.

Re claim 14: Katoh discusses (re claim 13) using a single decoding means. It would have been obvious at the time the invention was made to use a single decoding means because it is cheaper than two. Furthermore, there would be no advantage to parallel decoding on a single decoder. In fact, there would be a relative disadvantage as compared to sequential decoding because of the overhead of managing parallel processing.

15. Claim 12 is rejected under 35 U.S.C. 103(a) as being unpatentable over Katoh as modified by Tang as applied to claim 11 above, in further view of Li.

Li shows multiple direction scanning (abstract, line 6) in which a CCD array is employed. A CCD array (column 5, lines 40-50) can be used in the detector 14.

In view of Li's teachings, it would have been obvious to one of ordinary skill in the art at the time the invention was made to include the old and well-known CCD array for bar code scanning as taught by Li into the teachings of Ohkawa as modified by Bumte because a CCD array can pick up more data at once than a single photosensor and therefore would pick up data faster.

Conclusion

16. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Knowles (US 4,713,532) shows a scanner capable of scanning in multiple directions. Tamburrini (US 5,962,838) shows a barcode scanner in which the user can switch between a variety of scan patterns. Saegusa (US 6,076,735) shows a bar code scanner in which multiple mirrors create scanning beams from a variety of directions. Rabedeau (US 3,947,816) is an early

example of multi-directional barcode scanning. Munson (US 3,728,677) is another such early example.

17. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Daniel A Hess whose telephone number is (703) 305-3841. The examiner can normally be reached on 8:00 AM - 5:00 PM M-F.

18. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael G Lee can be reached on (703) 305-3503. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 308-7722 for regular communications and (703) 308-7722 for After Final communications.

19. Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.

Daniel A Hess
Examiner
Art Unit 2876

DH
April 19, 2002

THIEN M. LE
PRIMARY EXAMINER